

Test

1

Total mark

10

Answer the following questions.

A Choose the correct answer :

(8 marks)

- 1 The sum of reactants masses in any chemical reaction is the sum of products masses.
 - (a) doubled
 - (b) more than
 - (c) equal to
 - (d) less than
- 2 The bar used in the electromagnet is made up of
 - (a) isolated cooper.
 - (b) steel iron.
 - (c) wrought iron.
 - (d) aluminium.
- 3 The car brake performance is an application of
 - (a) gravitational forces.
 - (b) friction forces.
 - (c) centrifugal forces.
 - (d) forces of inertia.
- 4 In the periodic motion,
 - (a) the pathway is straight.
 - (b) motion is regularly repeated.
 - (c) mass is regularly repeated.
 - (d) speed is regularly changed.

B Give a reason for the following :

(2 marks)

The car passengers are rushed forward when the car stops suddenly.

Test

2

Total mark

10

Answer the following questions.

A Choose the correct answer :

(8 marks)

- 1 All of the following are periodic motions, except the
 - (a) fan motion.
 - (b) pendulum motion.
 - (c) train motion.
 - (d) sunflower motion.
- 2 A force is an effect that
 - (a) always changes the state of an object's motion.
 - (b) never changes the state of an object's motion.
 - (c) always changes both object's position and direction.
 - (d) may change the state of an object's motion.
- 3 If the molecule of carbon dioxide consists of one atom of carbon and two atoms of oxygen, knowing that the mass of carbon is 12 and that of oxygen is 16, so the mass of two molecules of carbon dioxide equals gm.
 - (a) 22
 - (b) 44
 - (c) 88
 - (d) 33
- 4 When the horse is tripped, the horse rider is suddenly rushed forward, this is related to the force of
 - (a) inertia.
 - (b) centrifugal.
 - (c) attraction.
 - (d) horse pushing.

B If the Earth's gravitational acceleration in a place is 9.8 m/sec^2 , find the weight of the following :

(2 marks)

- 1 0.3 Kg mass ball.

.....

- 2 50 Kg mass ball.

.....

Test

3

Total mark

10

Answer the following questions.

A Choose the correct answer :

(8 marks)

1 The inertia force affects the

- (a) moving objects only. (b) static objects only.
(c) moving and static objects. (d) small objects only.

2 From the examples of forces inside living system is/are

- (a) pulse inside blood vessels. (b) inertia.
(c) brakes. (d) burning match.

3 The movement of electrons around the nucleus is considered motion.

- (a) vibrating (b) circular
(c) transitional (d) wave

4 Which of the following is considered a balanced chemical equation ?

- (a) $\text{Mg} + \text{O}_2 \xrightarrow{\Delta} \text{MgO}$ (b) $2 \text{Mg} + \text{O}_2 \xrightarrow{\Delta} \text{MgO}$
(c) $\text{Mg} + \text{O}_2 \xrightarrow{\Delta} 2 \text{MgO}$ (d) $2 \text{Mg} + \text{O}_2 \xrightarrow{\Delta} 2 \text{MgO}$

B Mention one benefit (use) of electric winches :

(2 marks)

.....

.....

Test

4

Total mark

10

Answer the following questions.

A Choose the correct answer :

(8 marks)

- 1 waves is an example of mechanical waves.
- (a) Water (b) Light
(c) Radio (d) Ultraviolet
- 2 Ammonia combines with conc. HCl producing of ammonium chloride.
- (a) white ppt. (b) brown clouds
(c) white clouds (d) brown ppt.
- 3 An object's weight on the Earth's surface is related to the forces.
- (a) electromagnetic (b) gravitational
(c) weak nuclear (d) strong nuclear
- 4 is a technological application on inertia forces.
- (a) Car tyres
(b) Contraction and relaxation of muscles
(c) Safety belts
(d) Electromagnet.

B Compare between light and sound waves (one point only of each).

(2 marks)

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.....

Test

5

Total mark

10

Answer the following questions.

A Choose the correct answer :

(8 marks)

1 The following forces and operations are applications of friction, except

- (a) walking on the road.
- (b) car motion due to rotation of its wheels.
- (c) operation of dynamo (electric generator).
- (d) stopping the car using the brakes.

2 The amount of Earth's gravitational pull on the object is

- (a) object's mass.
- (b) object's weight.
- (c) Earth's gravitational acceleration.
- (d) centrifugal force.

3 The bright magnesium ribbon changes into a white powder of when it burns in air.

- (a) magnesium nitrate
- (b) magnesium oxide
- (c) magnesium hydroxide
- (d) magnesium dioxide

4 All of the following are electromagnetic waves, except the

- (a) thermal (infrared) rays.
- (b) visible light.
- (c) sound waves.
- (d) ultraviolet rays.

B What happens when ... ?

(2 marks)

An electric current flows through the isolated copper wire which is coiled spirally around a plastic tube containing iron bar and approach it to iron filings.

.....

.....

Answers of Science

Answers of Test

1

A 1 (c)

3 (b)

2 (c)

4 (b)

B Due to inertia, as they try to maintain their state of motion.

Answers of Test

2

A 1 (c)

3 (c)

2 (d)

4 (a)

B The weight of the object = object's mass \times Earth's gravitational acceleration1 The weight of the ball = $0.3 \times 9.8 = 2.94$ newton.2 The weight of the ball = $50 \times 9.8 = 490$ newton.

Answers of Test

3

A 1 (c)

3 (b)

2 (a)

4 (d)

B They are used to lift scrap iron and cars in ports.

Answers of Test

4

A 1 (a)

3 (b)

2 (c)

4 (c)

B Light waves : from electromagnetic waves.

Sound waves : from mechanical waves.

Answers of Test

5

A 1 (c)

3 (b)

2 (b)

4 (c)

B The iron nail is changed into a temporary magnet due to flowing of an electric current through the wire, then it will attract the iron filings.

Model (1)

15
Marks

1 (A) Choose the correct answer:

- 1 Salts result from the combination of
a) positive ion and noble gases b) negative ion and negative ion
c) positive ion and another negative one d) negative ion and nonmetal
- 2 Carbon monoxide
a) is very dangerous and causes diseases and may lead to death
b) causes breathing problems
c) harms the nervous system
d) causes greenhouse effect
- 3 If the mass of an object is 10 kg and the Earth's gravity acceleration is 10 m/s^2 , then the weight of the object equals
a) 20 Newton b) 1 Newton c) 100 Newton d) 50 Newton
- 4 Dynamo converts energy.
a) mechanical energy to electric b) electric energy to mechanical
c) sound energy to electric d) nuclear energy to electric

(B) Compare between acids and alkalis. (Regarding their effect on litmus paper)

.....

2 (A) Complete the following sentences:

- 1 The chemical formula of copper sulphate is
- 2 Elements combine with each other by weight ratios to form chemical compounds.
- 3 $\text{NH}_3 + \text{HCl} \xrightarrow{\text{conc.}}$
- 4 force is used in military purposes.

(B) Calculate the amount of the produced magnesium oxide from the reaction of 32 g of oxygen with 48 g of magnesium in the following reaction:



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.....
.....

Model (2)

15
Marks

1 (A) Choose the correct answer:

1 Which of the following compounds has the smallest atomic mass?

[knowing that H = 1, C = 12, N = 14, O = 16, S = 32].

- a) SO_2 b) NH_3 c) NO_2 d) CO_2

2 + $\text{O}_2 \longrightarrow 2\text{NO}_2$.

- a) NO_2 b) 2NO c) N_2 d) N

3 phenomenon increases the air temperature.

- a) Environmental b) Thunder c) Greenhouse d) Rainbow

4 From the factors that affect weight is/are

- a) the change of mass from one place to another
b) the change of the object's place
c) the object's speed
d) (a) and (b)

(B) Calculate the mass of an object if its weight is 980 Newton and the Earth's acceleration is 9.8 m/s^2 .

-
-

2 (A) Complete the following sentences:

- 1 salt dissolves in water, while salt is insoluble in water.
2 Heating magnesium ribbon in air produces
3 The electric current has effect.
4 The atom stores a massive amount of energy inside the

(B) Write the scientific term:

- Substances dissociate in water producing positive hydrogen ion. (.....)

Model (3)

15
Marks

1 (A) Put (✓) or (X):

- 1 Potassium sulphate dissolves in water. ()
- 2 CO gas is acidic and causes building corrosion. ()
- 3 Earth's gravity decreases by increasing the height. ()
- 4 The measuring unit of weight is Newton. ()

(B) Give a reason for:

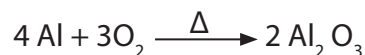
- Caustic soda turns red litmus paper into blue.

-

2 (A) Complete the following sentences:

- 1 is an acid consisting of hydrogen and negative atomic group.
- 2 $H_2 + \dots \longrightarrow 2HCl$.
- 3 Lung cancer is caused by burning of and fibers.
- 4 If the mass of an object is 500 gram knowing that the Earth's gravity acceleration is 9.8 m/s^2 , then its weight is

(B) Calculate the masses of reactants and products in the following reaction as the atomic mass of Al is 27, while O is 16:



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Model (4)

15
Marks

1 (A) Complete the following sentences:

- 1 Adding some droplets of Nitric acid turns litmus paper into
- 2 are acidic gases that result at the time of lightning.
- 3 The of an object is fixed value, while its weight from one place to another on the Earth's surface.
- 4 uses radioactive elements and radiation that is used for medical purposes.

(B) Write the balanced chemical equation when:

- Ammonia combines with nitric acid to form ammonium nitrate.

-

2 (A) Choose the correct answer:

- 1 All of the following are salts, except
a) AgCl b) $MgCl_2$ c) Na_2O d) $CuSO_4$
- 2 $C + O_2 \longrightarrow CO_2$ (Atomic mass of O = 16, C = 12). From this balanced equation. We need g from oxygen to burn 24 g of carbon to form g from carbon dioxide.
a) 64- 88 b) 64- 28 c) 68- 44 d) 18- 38
- 3 Inflammation of the eye is caused by
a) CO_2 b) CO c) SO_2 d) NO_2
- 4 When the electric current passes through a wire near a magnetic needle it
a) doesn't move b) deflects c) produces sound d) produces heat

(B) What happens when ...?

- The mass of an object increases (relative to the weight).

-

Model (5)

15
Marks

1 (A) Choose the correct answer:

- 1 All of the following are nonmetal oxides, except
a) CO_2 b) SO_2 c) CaO d) NO
- 2 If the Earth's gravity acceleration is 9.8 m/s^2 , then the mass of an object whose weight is 98 Newton is kg.
a) 98 b) 10 c) 0.1 d) 0.01
- 3 White fumes of is produced when ammonia combines with hydrochloric acid.
a) ammonium chloride b) ammonium sulphate
c) hydrochloric acid d) ammonia
- 4 gases are poisonous and affect the nervous system and eye.
a) Nitrogen oxides b) Sulphur oxides c) Carbon oxides d) No correct answer

(B) Calculate the masses of reactants and products in the following reaction, knowing that the masses of ($\text{Cl} = 35.5$, $\text{Na} = 23$)



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-
-
-

2 (A) Complete the following sentences:

- 1 Acid has taste, and gives ion when it dissociates in water.
- 2 Ammonium nitrate is composed of positive with a negative nitrate group.
- 3 When an electric current passes through a wire, force is produced.
- 4 If the mass of an object is 200 gram knowing that the Earth's gravity acceleration is 9.8 m/s^2 , then its weight is

(B) What happens when ...?

- Adding silver chloride to water, then shaking it. (Regarding the solubility).

-

15
Marks

1 Salts result from the combination of

- (B) Compare between acids and alkalis. (Regarding their effect on litmus paper)**

- 1 The chemical formula of copper sulphate is CuSO_4 .
- 2 Elements combine with each other by **constant** weight ratios to form chemical compounds.
- 3 $\text{NH}_3 + \text{HCl} \xrightarrow{\text{conc.}} \text{NH}_4\text{Cl}$
- 4 **Strong nuclear** force is used in military purposes.

$$2\text{Mg} + \text{O}_2 \xrightarrow{\Delta} 2\text{MgO} \quad (\text{atomic mass of Mg}=24, \text{O}=16)$$

∴ The mass of magnesium oxide = 80 g

Model (2)

15
Marks

1 (A) Choose the correct answer:

1 Which of the following compounds has the smallest atomic mass?

[knowing that H = 1, C = 12, N = 14, O = 16, S = 32].

- a) SO_2 b) NH_3 c) NO_2 d) CO_2

2 + $\text{O}_2 \longrightarrow 2\text{NO}_2$.

- a) NO_2 b) 2NO c) N_2 d) N

3 phenomenon increases the air temperature.

- a) Environmental b) Thunder c) Greenhouse d) Rainbow

4 From the factors that affect weight is/are

- a) the change of mass from one place to another
b) the change of the object's place
c) the object's speed
d) (a) and (b)

(B) Calculate the mass of an object if its weight is 980 Newton and the Earth's acceleration is 9.8 m/s^2 .

$$w = 980 \text{ N}$$

$$m = ?$$

$$g = 9.8 \text{ m/s}^2$$

$$m = \frac{w}{g} = \frac{980}{9.8} = 100 \text{ Kg}$$

2 (A) Complete the following sentences:

- 1 Sodium Chloride salt dissolves in water, while silver chloride salt is insoluble in water.
2 Heating magnesium ribbon in air produces magnesium oxide.
3 The electric current has magnetic effect.
4 The atom stores a massive amount of energy inside the nucleus.

(B) Write the scientific term:

- Substances dissociate in water producing positive hydrogen ion.

(Acids)

Model (3)

15
Marks

1 (A) Put (✓) or (X):

- 1 Potassium sulphate dissolves in water. (✓)
- 2 CO gas is acidic and causes building corrosion. (X)
- 3 Earth's gravity decreases by increasing the height. (✓)
- 4 The measuring unit of weight is Newton. (✓)

(B) Give a reason for:

- Caustic soda turns red litmus paper into blue.

Because it is a base (alkali).

2 (A) Complete the following sentences:

- 1 Sulphuric acid is an acid consisting of hydrogen and negative atomic group.
- 2 $\text{H}_2 + \text{Cl}_2 \longrightarrow 2\text{HCl}$.
- 3 Lung cancer is caused by burning of coal and cellulose fibers.
- 4 If the mass of an object is 500 gram knowing that the Earth's gravity acceleration is 9.8 m/s^2 , then its weight is 4.9 N.

(B) Calculate the masses of reactants and products in the following reaction as the atomic mass of Al is 27, while O is 16:



∴ Total amount of reactants masses = Total amount of products masses

∴ The mass of Aluminum + The mass of oxygen = The mass of aluminum oxide

$$(4 \times 27) + (6 \times 16) = 2 [(27 \times 2) + (16 \times 3)]$$

$$108 + 96 = 2 (54 + 48)$$

$$204 \text{ g} = 204 \text{ g}$$

Model (4)

15
Marks

1 (A) Complete the following sentences:

- 1 Adding some droplets of Nitric acid turns litmus paper into **red**.
- 2 **Nitrogen oxides** are acidic gases that result at the time of lightning.
- 3 The **mass** of an object is fixed value, while its **weight** changes from one place to another on the Earth's surface.
- 4 **Weak nuclear force** uses radioactive elements and radiation that is used for medical purposes.

(B) Write the balanced chemical equation when:

- Ammonia combines with nitric acid to form ammonium nitrate.



2 (A) Choose the correct answer:

- 1 All of the following are salts, except
a) AgCl b) MgCl_2 c) **Na_2O** d) CuSO_4
- 2 $\text{C} + \text{O}_2 \longrightarrow \text{CO}_2$ (Atomic mass of O = 16, C = 12). From this balanced equation. We need g from oxygen to burn 24 g of carbon to form g from carbon dioxide.
a) **64- 88** b) 64- 28 c) 68- 44 d) 18- 38
- 3 Inflammation of the eye is caused by
a) CO_2 b) CO c) SO_2 d) **NO_2**
- 4 When the electric current passes through a wire near a magnetic needle it
a) doesn't move b) **deflects** c) produces sound d) produces heat

(B) What happens when ...?

- The mass of an object increases (relative to the weight).

The weight of the object increases.

Model (5)

15
Marks

1 (A) Choose the correct answer:

- 1 All of the following are nonmetal oxides, except
a) CO_2 b) SO_2 c) **CaO** d) NO
- 2 If the Earth's gravity acceleration is 9.8 m/s^2 , then the mass of an object whose weight is 98 Newton is kg.
a) 98 b) **10** c) 0.1 d) 0.01
- 3 White fumes of is produced when ammonia combines with hydrochloric acid.
a) **ammonium chloride** b) ammonium sulphate
c) hydrochloric acid d) ammonia
- 4 gases are poisonous and affect the nervous system and eye.
a) **Nitrogen oxides** b) Sulphur oxides c) Carbon oxides d) No correct answer

(B) Calculate the masses of reactants and products in the following reaction, knowing that the masses of (Cl = 35.5, Na = 23)



\therefore Total amount of reactants masses = Total amount of products masses

\therefore The mass of sodium + The mass of chlorine = The mass of sodium chloride

$$(2 \times 23) + (2 \times 35.5) = 2 (23 + 35.5)$$

$$46 + 71 = 2 \times 58.5$$

$$117 \text{ g} = 117 \text{ g}$$

2 (A) Complete the following sentences:

- 1 Acid has **sour** taste, and gives **hydrogen** ion when it dissociates in water.
- 2 Ammonium nitrate is composed of positive **ammonium** group with a negative **nitrate** group.
- 3 When an electric current passes through a wire, **electromagnetic** force is produced.
- 4 If the mass of an object is 200 gram knowing that the Earth's gravity acceleration is 9.8 m/s^2 , then its weight is **1.96 N**.

(B) What happens when ...?

- Adding silver chloride to water, then shaking it. (Regarding the solubility).

Silver chloride doesn't dissolve in water.

Worksheet (3)

Q.1) Complete:

- 1- The chemical equation is a set of.....and.....
expressing the reactants and.....in the chemical reaction.
- 2- Burning of coal and cellulose fibers causes.....and
- 3- $C + O_2 \xrightarrow{\quad\quad\quad}$
- 4- Sulphur oxides such as.....and.....are acidic gases
which cause.....and.....
- 5- Combination of carbon with oxygen gives.....gas and this
reaction is considered..... reaction.

Q.2) What is meant by :

- Chemical reaction:

.....
.....

- Chemical equation

.....
.....

- Law of constant ratios

.....
.....

Q.3) Put (\checkmark) or (X) and correct the wrong ones:

- 1- Burning of cigarettes causes' lung cancer. ()
- 2- By increasing the ratio of carbon dioxide, the air temperature decreases. ()
- 3- Silver chloride salt is soluble in water. ()
- 4- In the chemical reaction, the bonds of reactants and products are broken. ()
- 5- When ammonia gas reacts with hydrochloric acid, white fumes of ammonium chloride are formed. ()
- 6- Burning fuels produce harmful gases which lead to dangerous effect on environment and human being. ()

Q.4) Calculate the masses of reactants and products in the following reaction: $S + O_2 \longrightarrow SO_2$

Knowing that the mass of (S= 32 gm, O = 16 gm)

Worksheet (4)

1-Complete:

- 1- Force can change the.....of motion of an object.
- 2- The measuring unit of the object's mass is.....while that of its weight is.....
- 3- The idea of how the electromagnet works is to changeto change into.....
- 4- Weak nuclear forces are used in.....
- 5- Egypt seeks to use.....energy in producing electricity.
- 6- Object's center of gravity is the point at the center of the object at which the force ofaffects it.
- 7- The electromagnet is made up of an isolated.....wire coiling around a bar of.....
- 8- Fundamental forces in nature are divided into,and

Q.1) Choose the correct answer:

1.If the object's mass is 10Kg and the Earth's gravity acceleration is 10m/s^2 , so the object's weight equal

- a.20Newton b.1 Newton c.100 Newton d.50 Newton

2.All of the following are caused by force except.....

- a.moving objects b.change object direction
c.changing mass d.increase object's speed

3.When an object's mass increases to the double, then its weight.....

- a.decreases to half b.is doubled
c.remains constant d.no correct answer

.....

.....

3.Gravity acceleration changes on Earth's surface from one place to another.

Q.4) What happens if:

1.A force effects on a static object.

2.A force effects on a moving object.

3.Moving away from the earth center (concerning mass and weight).

4.Passing electric current in a copper coil around bar.

5.Cutting off the electric current from electromagnet attracting iron filings.

6.Using electric motor in a lot of sets as fan and blender.

Q.5) What is meant by:

1-Force:

2-Weight:

Q.6) Problems:

1.Find the weight of an object its mass is 500 gm knowing that the Earth's gravity acceleration is 9.8 m/sec^2 .

2. Find the Earth's gravity acceleration for a body whose weight is 98 Newton knowing that its mass is 10 Kg.

3. By knowing that Earth's gravity acceleration in a place is 10 m/s^2 calculate:

a. An object's mass if its weight is 100 Newton.

b. An object's weight if its mass is 20 gram.

Q.7) Compare between each pair of the following:

1. Mass and Weight

Mass	Weight

3- Electric generator and Electric motor.

Electric generator	Electric motor.

Worksheet (5)

Q.1-Write the scientific term:

1. It is a property of an object to change its phase from rest to motion.
()
2. Technological application used in cars to prevent the force of inertia when a sudden change in motion occurs.
()
3. Forces that help living organisms
()
4. Substances that are used for decreasing the friction force among the internal moving parts of a machine.
()
5. Force that helps in moving and stopping cars.
()

Q.2-Complete the following sentences:

1.is from the force that causes the movement of objects.
2. Inertia force effects on and objects.
3. Bus passengers are rushed when the bus suddenly stops, due to the
4. Friction force is a force that originates between body and surface.
5. is used between the internal moving parts of machines to decrease friction force.
- 6- and of heart muscle helps in pumping the blood all over the body organs.
7. Liquids transfer through the wall of the cells from the concentration to the concentration.

Q.3-Choose the correct answer:

1.From the accompanied forces with motion is/ are.....

- a.inertia force b.friction force
- c.force inside the living systems d.all the previous answers

2.Static objects resist the change of itsfrom rest to motion.

- a.mass b.density c.movement d.all the previous answers

3.The falling of a coin in the cup by a rapid hitting is an application on....

- a.inertia
b.friction
c.force inside the living systems
d.all the previous answers

4. Friction force originates between.....

- a.bodies and water b.body and air
c.during motion d.all the previous answers

5.Car tires are covered with a very... .. substance.

- a.smooth b.hard c.coarse d.All the previous answers

6.The force that helps living organisms to do their biological operations is.....

- a.inertia b.friction
- c.force inside living system d.All the previous answers

7. Water is transported from the soil to leaves of the plant by the effect of..... force.

- a.gravity b.inertia c.inside living system d.friction

Q.4-Give reason for:

1. Falling of a coin in the cup by a rapid hitting of the paper.

.....

.....

2.The rider of the bike is rushed forward when he stops suddenly.

.....
.....

3.If a car is at rest, passengers are rushed backwards when the car moves suddenly

.....
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4.The policeman advice the drivers to use safety belts in cars.

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.....

5.The car and train have streamline shape.

.....
.....

6.Car tires are covered with grooves.

.....
.....

7.Body muscles contract and relax.

.....
.....

8.Corrosion of gears in the mechanical machines.

.....
.....

Q.5-What happens if:

1.You hit quickly a paper placed over a glass cup and a coin placed over the paper

.....
.....

2.A moving car stop suddenly (concerning the passengers).

.....

3.The passengers don't use the safety belts in cars and planes.

.....

4.The matches touch a rough surface.

.....

5.Stopping lubricating and oiling of internal moving parts of a machine.

.....

6.Body muscles don't contract and relax.

.....

Q.6-Mention one use for:

1.Inertia force.

.....

2.Friction force.

.....

3.Biological force.

.....

Worksheet (6)

Q.1) Complete:

- 1- The waves causing the wave motion are divided into two types which areand waves.
- 2- Relative motion is the change in an object... oras the time passes relative to another object or fixed point known as.....
- 3- The motion of simple pendulum is known as.....motion, while that is produced from throwing a stone in water is known as.....motion.
- 4- Electromagnetic waves are accompanied by... forces.
- 5- Thunder sound transfers in a form of.....waves, whereas lightning flash transfers in a form of.....waves.
- 6-rays are used in sterilizing the sets of surgical operation rooms, while.....rays are used in discovering some swellings.
- 7- Infrared rays are used in cooking food because they have...effect property.

Q.2) Give reasons:

- 1- Gamma rays have medical purposes.
.....
.....
- 2- The motion of the simple pendulum is a periodic motion.
.....
.....
- 3- A train motion is a translational motion.
.....
.....

4- Sound and water waves are mechanical waves.

.....

.....

Q.3) What is meant by?

1- Relative motion:

.....

.....

2- Periodic motion:

.....

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3- Translational motion:

.....

.....

4- Speed:

.....

.....

Geel 2000 Language Schools

Lesson 3 Worksheet 1

Complete:

1. The chemical equation is a set ofand..... expressing the reactants andmolecules in the chemical reaction
2. The chemical equation should be to achieve the law of
3. Combination of carbon and oxygen givesgas and this reaction is considered.....reaction
4.and.....are among products of fuel burning

Put (✓) or (X):

1. The reaction of magnesium and oxygen is considered a direct combination reaction between 2 nonmetal elements (.....)
2. Sulphur dioxide gas acts as a greenhouse effect (.....)
3. By increasing the ratio of carbon dioxide, the temperature decrease (.....)
4. Carbon oxides have bad effects on the nervous system and the eye (.....)
5. Burning of cigarettes causes lung cancer (.....)

What is meant by:

1. Chemical reaction:
.....
2. Chemical equation:
.....

Give reason:

1. The mass of magnesium is increased when it is burned
.....
2. Burning of fuel is among the reactions that pollute the environment
.....

Lesson 3 sheet 2

Choose:

1. The bright magnesium ribbon changes into a white powder ofwhen it burns in air
 - a) magnesium nitrite
 - b)magnesium oxide
 - c)magnesium hydroxide
 - d)magnesium dioxide
2. The sum of reactants masses in any chemical reaction isthe sum of product masses
 - a)doubled
 - b)more than
 - c)less than
 - d)equal to
3. Direct combination reaction takes place between.....
 - a)2 nonmetals
 - b)a metal and a nonmetal
 - c)2 compounds
 - d) all the previous
4. The gases that cause building corrossions are.....
 - a)nitrogen oxides
 - b)carbon oxides
 - c)sulphur oxides
 - d) b and c
5.oxides are resulted during the time of lightning
 - a)carbon
 - b)sulphur
 - c)nitrogen
 - d) a and b

Write the scientific term:

- 1- The sum of reactants masses in any chemical reaction equals the sum of products masses (.....)
- 2- Reactions which involve combination between an element with another or a compound with another (.....)
- 3- The gas which acts as a greenhouse effect (.....)
- 4- Poisonous gases that effect both the eye and the nervous system (.....)

Give reason:

- ## 1- Burning of coal and cellulose fibers has bad effect

.....

Lesson 1 worksheet 1

Complete:

- 1-,.....and.....forces are the main three divisions of forces in the nature
- 2- Atom stores a massive amount of energy inside it's.....
- 3- The nuclear forces can be divided into.....and.....
- 4- Electric fan is from devices that change.....energy into.....energy
- 5- Electromagnet is used in making.....and.....
- 6-and.....are the factors affecting the gravitational force between the earth and the object

Give reason:

- 1- Mass of an object remains constant by changing its position on earth
.....
- 2- Electric motor is used in making fans and washing machine
.....
- 3- When you push wall, it doesn't move
.....

Calculate 1) the weight of an object of 5 kg mass (acceleration due to gravity is 10 m/sec²)
.....

2) the mass of a child, its weight is 392 newton.(acceleration due to gravity = 9.8 m/sec²)
.....

Write the scientific term:

- 1- The amount of earth's gravitational pull on an object [.....]
- 2- Device used to change the mechanical energy to electric energy [.....]
- 3- The measuring unit of weight [.....]

Lesson 1 sheet 2

Choose:

- 1-is the measuring unit of the force
a)newton b)meter c)kilogram d)coulomb
- 2- The work done to lift an object upwards increases by increasing object's.....
a)volume b)mass c)density d)no correct answer
- 3- The bar used in electromagnet is made up of.....
a)isolated copper b)wrought iron c)steel iron d)aluminium
- 4-changes the mechanical energy into an electric energy
a)electromagnet b)dynamo c)electric motor d)no correct answer
- 5- We can obtain electric energy from all the following Except.....
a)dynamo b)electric motor c)electric power station

Give reason for:

- 1- An object's weight is changed from place to another
.....
- 2- The importance of nuclear force
.....
.....
- 3- Weight of object is always greater than its mass
.....

Calculate:

- 1- Mass of an object if its weight is 980 newton and the earth's gravitational acceleration is 9.8 m/sec^2
.....
.....
- 2- If the earth's gravitational acceleration is 9.8 m/sec^2 find weight of ball its mass is 0.3kg
.....

Lesson 2 sheet 1

Complete:

- 1-and.....are among the accompanied forces to motion
- 2-force prevents feet from slipping on roads during.....
- 3-and..... from benefits of friction
- 4- Heart muscle contract and relax to.....
- 5- Liquids transport through the walls of the cells from theconcentration toconcentration

Put (✓) OR (x):

- 1- Passengers are rushed backward when a car stops suddenly ()
- 2- Friction always opposes motion ()
- 3- Car tyres are covered with a very smooth substance to increase the friction force ()
- 4- Friction may occur between the surface of a solid object and air ()

Write the scientific term:

- 1- A technological application is used in cars to stop the forces of inertia when a sudden change in motion occurs [.....]
- 2- A property of an object has to resist the change of its state of rest or motion at regular speed in a straight line unless an external force acted on it [.....]

Give reason for:

- 1- The fan is going to turn after the electric current goes off
.....
- 2- When you drive a car in a city traffic for some time, the brakes become hot
.....
- 3- Parts of car are covered with grease
.....
- 4- Blood is pumped all over the body organs
.....

Lesson 2 sheet 2

Choose:

- 1- All the following are accompanied forces to motion Except.....
a)friction force b)gravitational force c)force of inertia d)forces inside living system
- 2- The inertia force affects theobjects
a)moving b)static c)moving and static d)no correct answer
- 3- Friction causes a great loss of mechanical energy because this energy is changed into.....energy
a)light b)electric c)magnetic d)heat
- 4- The idea of machines lubricant depends on the decrease in
a)weight b)force of inertia c)friction force d)forces of gravity
- 5- Water transports from soil to leaves of plant by the effect of
a)gravitational force b)biological forces c)inertia force d)friction force

What's meant by :

- 1- **Inertia:**.....
.....
- 2- **Frictionforce:**.....
.....

Give reason for:

- 1- The car passengers are rushed forward when the moving car stops suddenly.
.....
- 2- You can easily walk on grass than ice
.....
- 3- Policeman advise drivers to use safety belts in cars and planes
.....

Put (✓) OR (x):

- 1- Oils and lubricants have no effect on friction ()
- 2- Car brakes are from applications on friction forces ()
- 3- Contraction and relaxation of body muscles help in moving ()

Lesson 3 sheet 1

Complete:

- 1) Types of motions aremotion and.....motion
- 2) The movement of moon around earth is amotion, while that of train is amotion
- 3)and.....are examples of periodic motion
- 4) Sound waves and.....waves are examples ofwaves
- 5) mechanical waves are produced due to theof the medium particles
- 6)and.....are emitted from sun
- 7)rays are used in cooking food as they haveeffect

Put (✓) OR (x)

- 1) Periodic motion is changed between start and final positions ()
- 2) Simple pendulum motion is a wave motion ()
- 3) Water waves motion is a periodic motion ()
- 4) Water waves are electromagnetic waves ()
- 5) Gamma rays are used in photographing bones ()
- 6) We use infrared rays in data show ()

Mention one application:

- 1) Sound waves:.....
- 2) X-rays:
- 3) Gamma rays:
- 4) Infrared rays:

Give reason:

- 1) A train motion is a transitional motion

.....

2) We see lightning before hearing thunder although they occur at the same time

.....
.....

3) Sound and water are mechanical waves

.....

Lesson 3 sheet 2

Choose:

1) The motion of the following objects are transitional motion Except motion of....

- a)train b)simple pendulum c)car d)bicycle

2) Sounds are produced due to.....

- a)vibration of medium particles b)electromagnetic forces
c)electrostatic forces d)wave motion

3)waves is an example of mechanical waves

- a)water b)light c)radio d)ultraviolet

4)are used in examining and curing sets for human body

- a)ultrasonic waves b)gamma rays c)infrared rays d)x-rays

5)rays are used in night vision apparatus

- a)infrared b)gamma c)ultraviolet d)x-rays

Write the scientific term:

1) It is a change of an object's position or direction as time passes relative to a fixed point [.....]

2) The motion which is regularly repeated in equal periods of time [.....]

3) Waves don't need medium to travel through [.....]

Give reason:

1) Exposing dental treatment tools for ultraviolet rays before reuse

.....

Unit (1) lesson 3

1. Write the scientific term :

- 1-The number of electrons gained, lost, or even shared by an atom during a chemical reaction. (.....)
- 2-set of atoms joined together, behave like one atom only, having a special valency and can't be existed freely (.....)
- 3.The compound dissolved in water producing positive hydrogen ions. (.....)
4. Substances are dissociated in water producing negative hydroxide ions. (.....)
- 5-Compounds resulted from the combination between oxygen and an element even through it is metal or non-metal. (.....)
- 6-Compounds produced as a result of the chemical combination of a positive metal ion with a negative atomic group except oxygen. (.....)
7. A set of chemical formula and symbols expressing the reactants, the products and the reaction conditions (.....)
- 8- Reactions which involve combination between an element with another element (.....)
- 9- White fume formed on placing a glass rod wet with ammonia close to the mouth of a test tube containing conc. hydrochloric acid. (.....)

2. Complete the following statements:

1. The valency of aluminum $_{13}\text{Al}$ is while that of calcium $_{20}\text{Ca}$ is
2. The valency of Sulphur atom may be, or.....
3. The symbol of sulphate group is and it is formed of atoms of different elements.
4. The chemical formula of sodium carbonate is and it consists of atoms of different elements
5. If the chemical formula of aluminum sulphate is $\text{Al}_2(\text{SO}_4)_3$, so the valency of aluminum atom is while the valency of sulphate group is
6. The valency of sodium in sodium carbonate Na_2CO_3 is and its valency in sodium chloride NaCl is
7. On dissolving in water, acids give positive ion and alkalis give negative..... ion.
8. Mineral acids are formed when hydrogen is joined with one of atomic groups except..... group.
9. The symbol of all mineral acids begin with atom, while the symbol of all bases end by group.
10. is from the salts that dissolve in water, while is from the salts that insoluble in water.
11. In the reaction $2\text{Mg} + \text{O}_2 \xrightarrow{\Delta} 2\text{MgO}$
 - a) The bond in oxygen molecule is broken to give
 - b. The magnesium atom combines with atom to form molecule.

12. If 48 gm of magnesium combine with 32 g of oxygen, they produce gm of

3. Give reasons for:

1-Both sodium $_{11}\text{Na}$ and chlorine $_{17}\text{Cl}$ are monovalent although they have different atomic number.

.....
.....

2-An oxygen atom joins two atoms of sodium when composing one molecule of sodium oxide.

.....
.....

3-All acids turn the colour of litmus paper to be red and having a sour taste, while all bases turn the colour of litmus to be blue with a slippery taste.

.....
.....

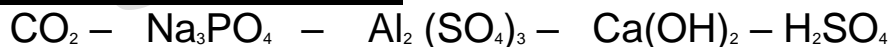
4-We can obtain sodium chloride solution and not silver chloride solution.

.....
.....

5-A chemical equation should be balanced.

.....
.....

4. Write the names of the following compounds and mention the number of atoms for each:



.....
.....

5. Write the chemical formula:

- | | |
|---------------------|----------------------|
| 1- Sodium hydroxide | 2- Sodium sulphate |
| 3- Copper nitrate | 4- Magnesium oxide |
| 5- Sulphuric acid | 6- Copper sulphate |
| 7- Aluminium oxide | 8- Calcium nitrate |
| 9- Calcium chloride | 10- Sodium carbonate |

6. Write the chemical equation representing the following reactions, then indicate the type of each reaction:

1. Burning of carbon in the presence of oxygen.

.....

2. Reaction of ammonia gas and hydrochloric acid.

.....

3. Reaction of carbon monoxide with oxygen.

.....

7. Calculate the masses of reactants and products:

1. $\text{HCl} + \text{NaOH} \rightarrow \text{NaCl} + \text{H}_2\text{O}$

.....

.....

2. $\text{S} + \text{O}_2 \rightarrow \text{SO}_2$

.....

.....

knowing that the mass of H = 1 , O = 16 , S = 32 , Cl = 35.5 , Na = 23

Lesson 3 Exam**1-Choose the correct answer:**

- 1- Direct combination reaction takes place between.....
 - a. Two metals
 - b. A compound with another
 - c. a metal and nonmetal
 - d. all of the previous answers.
- 2- Increasing the ratio of.....gas in the atmosphere leads to increasing the air temperature.
 - a. Carbon monoxide
 - b. carbon dioxide
 - c. sulphur oxides
 - d. (b) and (c)
- 3- All of these gases are acidic gases except.....
 - a. Sulphur dioxide
 - b. sulphur trioxide
 - c. nitrogen oxides
 - d. ammonia
- 4- The bright magnesium ribbon changes into a white powder of.....when it burns in air.
 - a. Magnesium nitrite
 - b. Magnesium oxide
 - c. Magnesium hydroxide
 - d. Magnesium dioxide

2-Put (✓) or (X) and correct the wrong ones:

- 1- When ammonia gas reacts with hydrochloric acid, white clouds of ammonium chloride are formed. ()
- 2- Burning of cigarettes causes lung cancer. ()
- 3- Sulphur oxides and nitrogen oxides are acidic gases. ()

3-Write the scientific term:

- 1- Oxides that cause building corrosion. (.....)
- 2- The sum of reactants masses in any chemical reaction equal the sum of products masses (.....)

4-Complete the following statements:

- 1- In the reaction : $2\text{Mg} + \text{O}_2 \longrightarrow 2\text{MgO}$
 - (a)- The in an oxygen molecule is broken to give.....
 - (b)- The Magnesium atom combines with.....atom to formmolecule

5-Give reason for: The mass of magnesium is increased when it is burned.

Unit 2**Lesson 1 Exam 1****1-Choose the correct answer:**

1. Earth's gravitational acceleration is changed from a place to another on Earth's surface because of the
 - a. objects' masses.
 - b. distance from the Earth's center.
 - c. Earth's mass.
 - d. temperatures.
2. If the mass of an object is 2 kg and the Earth's gravitational acceleration is 10 m/sec, the object's weight equals.....
 - a. 0.2 newton.
 - b. 2 newton.
 - c. 20 kg.
 - d. 20 newton.
3. Electric motor is used in the manufacture of.....
 - a. radio.
 - b. electric bell.
 - c. blender (mixer).
 - d. watch.
4. The nuclear radiations used in medicine are produced from.....
 - a. gravitational forces.
 - b. weak nuclear forces.
 - c. electromagnetic forces
 - d. strong nuclear forces.

2-Put (√) or (×), then correct the wrong one:

1. Fundamental forces in nature are divided into five main kinds. ()
2. The gravitational force between an object and the Earth decreases as the mass of the object decreases. ()
3. The weight of the object at the north pole is less than its weight at the equator. ()
4. Electric generator is used in the manufacture of washing machines. ()

3-Write the scientific term of each of the following:

- 1- The ability of the Earth to attract an object to its center.
- 2- The effective point of the object's weight.
- 3- An instrument used to change electric energy into a mechanical energy.

4-Give reasons for :

1. The weight of the object is always greater than its mass.

.....

.....

2. The importance of nuclear force.

.....

.....

Lesson 1 Exam 2

1-Choose the correct answer:

1. The object's weight changes by changing its.....
 - a. volume
 - b. position on Earth's surface.
 - b. velocity.
 - d. (b) and (e) together.
2. Strong nuclear forces are used in.....
 - a. medicine.
 - b. scientific researches.
 - b. industry
 - d. military purposes.

2-What happens when ... and why ?

- You push a wall with your hand.

.....

.....

- Migration of a bird from the south pole to the equator (related to the mass and weight of the bird)

.....

.....

3-Complete the following statements:

- 1- Electromagnet is used in making.....and.....
- 2- The measuring unit of the object's mass is.....,while that of its weight is.....
- 3- Fundamental forces in nature are divided into three divisions, which are.....forces,.....forces and.....forces.
- 4-and.....are the factors affecting the gravitational force between the Earth and the object.

4-Mention one use of.....

- 1- Weak nuclear force
- 2- electric winches.

5-Problems:

Calculate the mass of an object if its weight 980 newton and the Earth's gravitational acceleration is 9.8 m/sec^2

.....

.....

.....

Lesson 2 Exam

1- Choose the correct answer:

- 1- The idea of machines lubrication depend on the decrease in.....
 - a. Their weights b. forces of inertia c. friction forces d. forces of gravity
- 2- When a moving bus stops suddenly, the passengers and drivers.....
 - a. Rush backward c. rush forward
 - b. Turn upside down d. tend to lean
- 3- The following forces and operations are applications of friction, **except**.....
 - a. Walking on the road c. car motion due to the rotation of its wheels
 - b. Operation of dynamo. D. stopping the car using the brakes
- 4- When the horse is tripped, the horse rider is suddenly rushed forward, this is related to the.....force.
 - a. Inertia b. nuclear c. gravitational d. horse pushing

2-Put (✓) or (×), then correct the wrong one:

- 1- Safety belts in cars work on increasing the forces of inertia. ()
- 2- Friction may occur between the surface of a solid object and air. ()
- 3- There are forces inside amoeba to keep its survival. ()
- 4- Car tires are covered with a very smooth substance to increase the friction with roads. ()

3-Give reasons for :

- 1- The match is ignited when it is rubbed with a rough surface.
- 2- You can run easily on grass than that on ice.

4-Write the scientific term:

- 1- forces that help living organisms to do their biological operations.(.....)

5-What is meant by inertia ?

.....

6-Mention two benefits of friction

Model answer

1. Write the scientific term (What's meant by):

1- the valency 2- atomic group 3- acids
4- bases 5- oxides 6- salts

7-chemical equation

8-direct combination reactions 9- ammonium chloride

2. Complete:

1-trivalent - divalent

2-divalent – tetravalent – hexavalent

3- $(\text{SO}_4)^{2-}$ – five – two 4- Na_2CO_3 – six - three

5- trivalent – divalent 6- monovalent – monovalent

7- hydrogen – hydroxide 8- negative – OH

9- H , OH 10-sodium chloride – silver chloride

11-a) double covalent – two oxygen atoms

a. oxygen – magnesium oxide

12 - 80 – magnesium oxide

3. Give reasons:

1. Because during chemical reactions, sodium atom loses one electron, while chlorine atom gains or shares with one electron.
2. Because oxygen is divalent, while sodium is monovalent.
3. Because acids produce positive hydrogen ions while bases produce negative hydroxide ions.
4. Because sodium chloride is water soluble salt, while silver chloride is water insoluble salt.
5. Because the total mass of the reactants before the reaction must equal to the total mass of the products after the reaction.

4. Write the names of the following compounds and mention the number of atoms for each:

1. Carbon dioxide (3 atoms)
2. Sodium phosphate (8 atoms)
3. Aluminum sulphate (17 atoms)
4. Calcium hydroxide (5 atoms)
5. Sulphuric acid (7 atoms)

5. Write the chemical formula:

- | | | |
|-------------------------------------|--------------------------------------|--------------------------------------|
| 1) NaOH | 2) Na ₂ SO ₄ | 3) Cu(NO ₃) ₂ |
| 4) MgO | 5) H ₂ SO ₄ | 6) CuSO ₄ |
| 7) Al ₂ O ₃ | 8) Ca(NO ₃) ₂ | 9) CaCl ₂ |
| 10) Na ₂ CO ₃ | | |

Write the chemical equation representing the following reactions, then indicate the type of each reaction:



Element + Element

(non metal + non metal)



compound + compound



Element and Compound

7. Calculate the masses of reactants and products:

1) Mass of reactants = $1 + 35, 5 + 23 + 16 + 1 = 76.5 \text{ gm}$

Mass of products = $23 + 35.5 + (2 \times 1) + 16 = 76.5 \text{ gm}$

2) Mass of reactants = $32 + (2 \times 16) = 64 \text{ gm}$

Mass of products = $32 + (2 \times 16) = 64 \text{ gm}$

Answer Model exam lesson 3

1- 1-d 2-b 3-d 4-d

2- 1-V 2-V 3-V

3- 1- Sulphur oxides

2-law of constant masses

4- double covalent – two oxygen atoms

oxygen – magnesium oxide

5- bec. it combines with oxygen gas in air

Model answer unit 2 lesson 1

1) 1-b 2-d 3-c 4-b

2) 1-x 2-v 3-x 4-x

3) 1-weight 2- center of gravity 3- electric motor

4) 1- Bec. the weight = mass x acceleration due to gravity

2-used to get radioactive elements and radiation which used in medicine ,
industry and scientific researches

Model answer Exam 2 unit 2 lesson 1

1-Choose the correct answer:

1.D 2.D

2-What happens when ... and why ?

1-The wall doesn't move – Bec. the force acting on the wall is improper

2-The mass doesn't change – the weight decrease

Complete the following statements:

1- electric bell - electric winchers

2-Kg - N

3-Gravitational – electromagnetic – nuclear

4-mass of object – the distance from the center of earth

Mention one use of.....

1- used to get radioactive elements and radiation which used in medicine , industry and scientific researches

2- lift scraps irons and cars

Problem : $\text{mass} = w / 9.8 = 980 / 9.8 = 100 \text{ kg}$

Choose the correct answer:

1-c 2- c 3-b 4-a

1- x 2-v 3-v 4-x

Give reasons for :

1-Bec . heat energy is generated due to the friction

2-Bec. to the friction force in grass is more than on ice

Write the scientific term:

1-biological forcev

What is meant by inertia ?

-It is the property of an object that can resist the change of its state of rest or motion at regular speed in straight line unless an external force acts on it

Mention three benefits of friction ?

Help in burning match - prevent feet from slipping on road



March Revision

Mr. Ahmed ElBasha

★ **(1) Write the scientific term:**

- 1) The motion which is regularly repeated in equal periods of time. (.....)
- 2) Breaking the reactants bonds and forming new ones among the products (.....)
- 3) Type of nuclear forces used in medicine and scientific research. (.....)
- 4) Oxides which help in building corrosion. (.....)
- 5) Resistant forces originate between the object in motion and the medium. (.....)
- 6) A set of symbols and chemical formulae representing reactants and products molecules in chemical reaction (.....)
- 7) The product of multiplying object's mass by Earth's gravity acceleration. (.....)
- 8) It is an effect that attempts to change state of object from static to motion or vice versa. (.....)
- 9) The device that changes electric energy into mechanical energy (.....)
- 10) Rays used in detecting the bone fractures. (.....)
- 11) The gas that acts as a greenhouse (.....)
- 12) Forces produced inside the nucleus (.....)
- 13) They are waves that produced due to vibration of medium particles and they need a medium to transfer through (.....)
- 14) Waves, which are spread out in all media and space with extremely great speed (.....)
- 15) Technological application is used in cars and planes to protect passengers from inertia. (.....)
- 16) The measuring unit of the weight. (.....)

***(2) Choose the right answer:**

1. The measuring unit of force is

- a. kg. b. newton. c. m/s^2 d. m/s.

2. are used in night vision apparatus.

- a. Infrared rays b. Ultraviolet rays c. X-rays d. Gamma rays

3. All of the following are electromagnetic waves except the

- a. sound waves. b. ultraviolet waves. c. infrared rays. d. visible light

4. When a car is at a rest starts moving suddenly, the passengers

- a. rush backward. b. turn upside down. c. rush forward. d. keep steady.

5. are used in examining bones.

- a. Ultrasonic waves b. Gamma rays c. Infrared rays d. X-rays

6. is a mechanical wave.

- a. X-ray b. Light c. Sound d. Gamma ray

7. Lubricating and oiling mechanical machines depend on decreasing the effect of force.

- a. inertia b. friction c. attraction d. electromagnetic

8. changes the mechanical energy into electric energy.

- a. Dynamo b. Electromagnet c. Motor d. Electric fan

9. If the weight of a body is 400 N, knowing that the Earth's gravitational acceleration is 10 m/sec.^2 , its mass equals

- a. 40 kg. b. 4 kg. c. 4000 kg. d. 80 kg.

10. Ammonia combines with HCl producing of ammonium chloride.

- a. white powder b. white ppt. c. white fumes d. white solution

11. rays are used in remote sensing instruments.

- a. Ultraviolet b. Infrared c. Gamma d. Visible light

12. The object's weight on Earth's surface is related to

- a. electromagnetic force. b. gravitational force.
c. nuclear force. d. friction force.

13. From circular motion is

- a. pendulum motion. b. movement of Moon around Earth.
c. water wave motion. d. bicycle motion.

14. All of the following forces and operations are applications on friction except

- a. walking on ground.
- b. moving cars.
- c. the work of dynamo.
- d. stopping cars.

15. Electromagnet is used in making

- a. electric winch.
- b. calculator.
- c. microscope.

16. The bar used in electromagnet is made of

- a. isolated copper.
- b. steel iron.
- c. wrought iron.
- d. aluminium.

17. Earth's gravitational acceleration is changed from a place to another on Earth's surface because of

- a. object's mass.
- b. Earth's mass.
- c. the distance from the Earth's center.

18. From accompanied force due to the motion are

- a. force of inertia
- b. friction force
- c. all the previous

19. When car move forward suddenly the passenger rushed

- a. forward
- b. backward
- c. upright

20. From application on force inertia

- a. safety belts
- b. car's break
- c. car tires

21. The objects fall down by effect of

- a. electromagnet force
- b. gravitational force
- c. nuclear force
- d. magnetic force

22. Mass x Earth's gravity acceleration equal

- a. volume
- b. weight
- c. density

23. when two cars move in same direction with velocity 80 km/h, the driver of the first car imagines that the second car moves with velocity km/h

- a. zero
- b. 80
- c. 160
- d. No correct answer

✳(3) Complete the following:

1. $C + O_2 \rightarrow$
2. $2CO + O_2 \rightarrow$
3. $2Mg + O_2 \rightarrow$
4. Electric motor works on changing energy into energy.
5. Motion is classified into two types, which are and
6. + $\rightarrow 2MgO$
7. Electric generator changes energy into energy.
8. The car passengers are pushed when the car stops suddenly by the effect of force.
9. Egypt seeks to use energy in producing electricity.
10. Dynamo changes energy into energy.
11. Oil and lubricants are used in machines to
12. produced from lightning that affect the nervous system and eye.
13. $2Mg +$ $\rightarrow 2MgO$
14. The motion of simple pendulum is motion, while the motion of train is motion.
15. $NH_3 +$ $\rightarrow NH_4Cl$, the type of this reaction is
16. Nitrogen oxide affects system and the
17. and are from the examples of transitional motion.
18. The electromagnet changes energy into energy.
19. rays are used in night vision apparatus.
20. Electromagnet is used to make and
21. The weight of an object depends on its and
22. The measuring unit of weight is while that of gravity acceleration is and that of mass is
23. The erosion of machine parts is from the harms of

✱(4) Correct the underlined words:

1	<u>Sulphur oxides</u> are poisonous acidic gases that affect the nervous system and the eye.	(.....)
2	<u>Mass</u> of an object is the Earth's ability to attract that object	(.....)
3	The idea of machines lubrication is depends on the decreasing of <u>the gravity</u>	(.....)
4	Electric generator (dynamo) converts the kinetic energy into <u>heat</u> one.	(.....)
5	<u>Carbon oxides</u> are resulted at the time of lightning	(.....)
6	The motion of simple pendulum is <u>circular</u> motion	(.....)
7	Egypt seeks to use nuclear energy in producing <u>medicine</u>	(.....)
8	The change of an object's position as time passes according to a frame of reference is called <u>average motion</u>	(.....)
9	Friction causes a great loss of <u>chemical</u> energy	(.....)
10	The motion of simple pendulum is an example of <u>wave</u> motion	(.....)
11	The passengers are rushed backward when the car moves suddenly due to <u>friction</u> force.	(.....)
12	Safety belts in cars work on <u>increasing</u> the forces of inertia	(.....)
13	Electric generator (dynamo) converts the <u>heat</u> energy into electric energy.	(.....)
14	Passengers are rushed <u>forward</u> when the car at rest moves forward suddenly.	(.....)

★(5) Give reason for:

1. White clouds are formed when ammonia gas reacts with conc. hydrochloric acid.
.....
2. The car passengers are rushed forward when the moving car stops suddenly.
.....
3. CO₂ gas acts as a greenhouse effect.
.....
4. We see lightning before hearing thunder.
.....
5. The sunlight reaches to us, but we can't hear the sound of solar explosions.
.....
6. Lubricating and oiling mechanical machines.
.....
7. Safety belts are used in cars.
.....
8. An object's weight is changed from a planet to another.
.....
9. Infrared rays are used in cooking.
.....
10. The gravity on the Earth's surface is larger than that on Mars surface.
.....

★(6) What happen if:

1. The car stops suddenly.
.....
2. When an electric current passes through an insulated copper wire coiling around a bar of soft iron.
.....
3. Machines are not lubricated.
.....
4. Approaching a wet rod with hydrochloric acid to ammonia gas.
.....
5. The increase of the percentage of carbon dioxide in the atmospheric air.
.....
6. Burning of coal and cellulose fibers.
.....

***(7) Put (\checkmark) or (X) :**

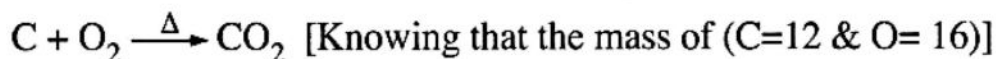
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|--|--------|
| 1. The exerted work to lift an object increases by increasing the object's mass. | () |
| 2. The motion of simple pendulum is a transitional motion. | () |
| 3. The sound and water waves are examples of electromagnetic waves. | () |
| 4. Weak nuclear forces are used in producing electric energy. | () |
| 5. The burning of carbon in presence of oxygen is a direct combination. | () |
| 6. The weight of object decreases with increasing its mass. | () |
| 7. By increasing the ratio of CO_2 , the air temperature decreases. | () |
| 8. The force is measured in newton. | () |
| 9. The burning of carbon in presence of oxygen is direct combination | () |
| 10. Electric current has magnetic effects | () |
| 11. The sound and water waves are examples of Electromagnetic wave. | () |
| 12. Ultraviolet rays are used in examining and curing sets for human body | () |
| 13. Radio waves used in photographic | () |
| 14. Lubricating and oiling reduce friction between moving parts | () |

***(8) Write the chemical equation representing the following reactions :**

1. The reaction between carbon monoxide with oxygen.
2. Hydrochloric acid is combined with ammonia gas.
3. The burning of magnesium ribbon in the air.
4. Burning coal in air.
5. Reaction between hydrogen and chlorine.
6. Reaction between nitrogen monoxide with oxygen.

★(9) Problems :**1**

Calculate the masses of reactants and products in the following reaction :

**2**

An object of weight 98 N. Calculate its mass knowing that the Earth's gravitational acceleration is 9.8 m/sec^2 .

.....

.....

.....

3

Calculate the weight of 0.8 kg mass ball, knowing that Earth's gravitational acceleration is 9.8 m/sec^2 .

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.....

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4

Calculate the mass of an object, if its weight is 460 newton, knowing that the Earth's gravitational acceleration is 10 m/sec^2

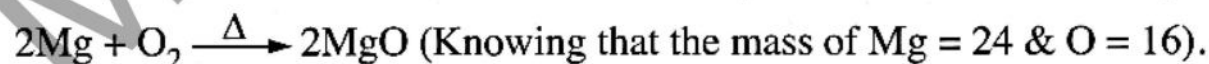
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5

Calculate the total mass of reactants and products in the following reaction :



Model Answer

*(1) Write the scientific term :

1. Periodic motion	5. Friction force	9. Motors	13. Mechanical waves
2. Chemical reaction	6. Chemical equation	10. X-Rays	14. Electromagnetic waves
3. Weak nuclear force	7. Object's weight	11. Carbon dioxide	15. Safety belts
4. Sulphur oxides	8. Force	12. Nuclear force	16. Newton

*(2) Choose the right answer:

1. B	5. D	9. A	13. B	17. C	21. B
2. A	6. C	10. C	14. C	18. C	22. B
3. A	7. B	11. B	15. A	19. B	23. A
4. A	8. A	12. B	16. C	20. A	

*(3) Complete the following :

1. CO ₂	8. Forward – inertia	15. HCl – Direct combination	21. Mass – gravitational force
2. 2CO ₂	9. Nuclear	16. Nervous – eye	22. Newton – M/s ² – Kg
3. 2MgO	10. Mechanical – Electric	17. Car – train	23. Friction force
4. Electric – mechanical	11. Decrease friction force	18. Electric – magnetic	
5. Periodic – transitional	12. Nitrogen oxide	19. Infrared	
6. 2Mg + O ₂	13. O ₂	20. Electric bell – winch	
7. Mechanical – Electric	14. Periodic – transitional		

*(4) Correct the underlined words:

1. Nitrogen oxide	5. Nitrogen oxide	9. Mechanical	13. Mechanical
2. Weight	6. Periodic	10. Periodic	14. Backward
3. Friction	7. Electricity	11. Inertia	
4. Electricity	8. Relative motion	12. Decrease	

*(5) Give reason for:

- Due to the formation of ammonium chloride as white clouds.
 $\text{NH}_3 + \text{HCl} \longrightarrow \text{NH}_4\text{Cl}$
- Due to inertia, as they try to maintain their state of motion.
- Because it prevents the penetration of the thermal rays produced from the Earth to outer space.
- Because the light of lightning is from electromagnetic waves, while the sound of thunder is from mechanical waves,
- Because the sunlight is electromagnetic waves which can travel through free space, while the sound of solar explosions is mechanical waves which can't travel through free space.
- To decrease friction between moving parts of machines
- Because safety belts work on stopping the forces of inertia
- Due to the difference in the gravity acceleration from a planet to another
- Because they have heat effect property.
- Because the mass of the Earth planet is larger than that of Mars planet and the force of gravity is directly proportional to the mass.

*(6) What happen if:

- The driver and passengers will be rushed forward.
- The iron bar will attract the iron filings, because the iron bar is changed into a magnet
- Parts of machines getting hot and erosion occurs.
- White clouds of ammonium chloride are formed.
- The temperature of air increases.
- It causes air pollution and lung cancer.

*(7) Put (✓) or (X) :

1. (✓)	4. (X)	7. (X)	10. (✓)	13. (X)
2. (X)	5. (✓)	8. (✓)	11. (X)	14. (✓)
3. (X)	6. (X)	9. (✓)	12. (X)	

***(8) Write the chemical equation representing the following reactions:**

- $2\text{CO} + \text{O}_2 \longrightarrow 2\text{CO}_2$
- $\text{NH}_3 + \text{HCl} \longrightarrow \text{NH}_4\text{Cl}$
- $2\text{Mg} + \text{O}_2 \longrightarrow 2\text{MgO}$
- $\text{C} + \text{O}_2 \longrightarrow \text{CO}_2$
- $\text{H}_2 + \text{Cl}_2 \longrightarrow 2\text{HCl}$
- $2\text{NO} + \text{O}_2 \longrightarrow 2\text{NO}_2$

***(9) Problems:**

1	$\text{C} + \text{O}_2 \xrightarrow{\Delta} \text{CO}_2$ $12 + (2 \times 16) \qquad (12 + 2 \times 16)$ $44 \text{ gm.} \qquad 44 \text{ gm.}$ <p>The sum of reactants masses = 44 gm. The sum of products masses = 44 gm.</p>	4	$\text{Object's mass} = \frac{\text{Object's weight}}{\text{Earth's gravitational acceleration}}$ $= \frac{460}{10} = 46 \text{ kg.}$
2	$\text{Object's mass} = \frac{\text{Object's weight}}{\text{Earth's gravitational acceleration}}$ $= \frac{98}{9.8} = 10 \text{ kg.}$	5	$\begin{array}{ccc} 2 \text{ Mg} & + & \text{O}_2 & \xrightarrow{\Delta} & 2\text{MgO} \\ (2 \times 24) & & (2 \times 16) & & 2(24 + 16) \\ 48 & + & 32 & & 2 \times 40 \\ & & 80 \text{ gm} & & 80 \text{ gm} \end{array}$ <ul style="list-style-type: none"> The sum of reactants masses = 80 gm. The sum of products masses = 80 gm.
3	<p>Object's weight = Object's mass \times Earth's gravitational acceleration</p> $= 0.8 \times 9.8 = 7.84 \text{ newton.}$		